IT Linux Support

Bill Sheehan
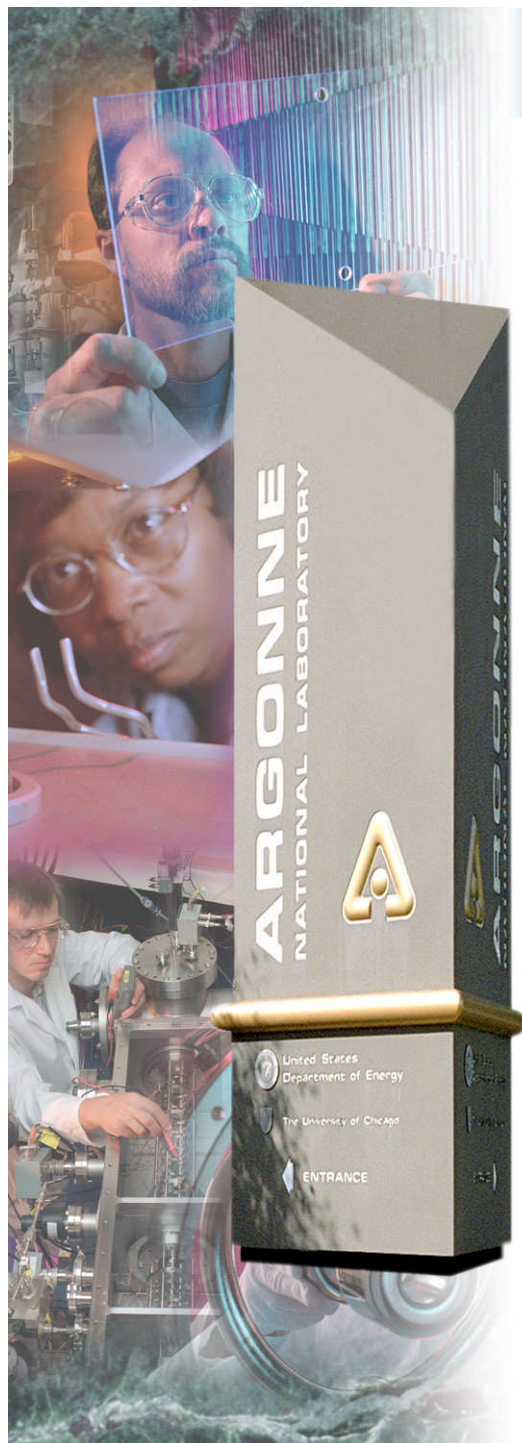
Popular Linux Distributions:

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"Currently, there are a total of 386 Linux distributions and 9 BSD distributions in the database. Of these distributions, 50 have been officially discontinued, or the distribution's web site (or product information) simply disappeared, or became inactive (i.e haven't released a new version in over 2 years and their web sites don't give indication of work in progress)."
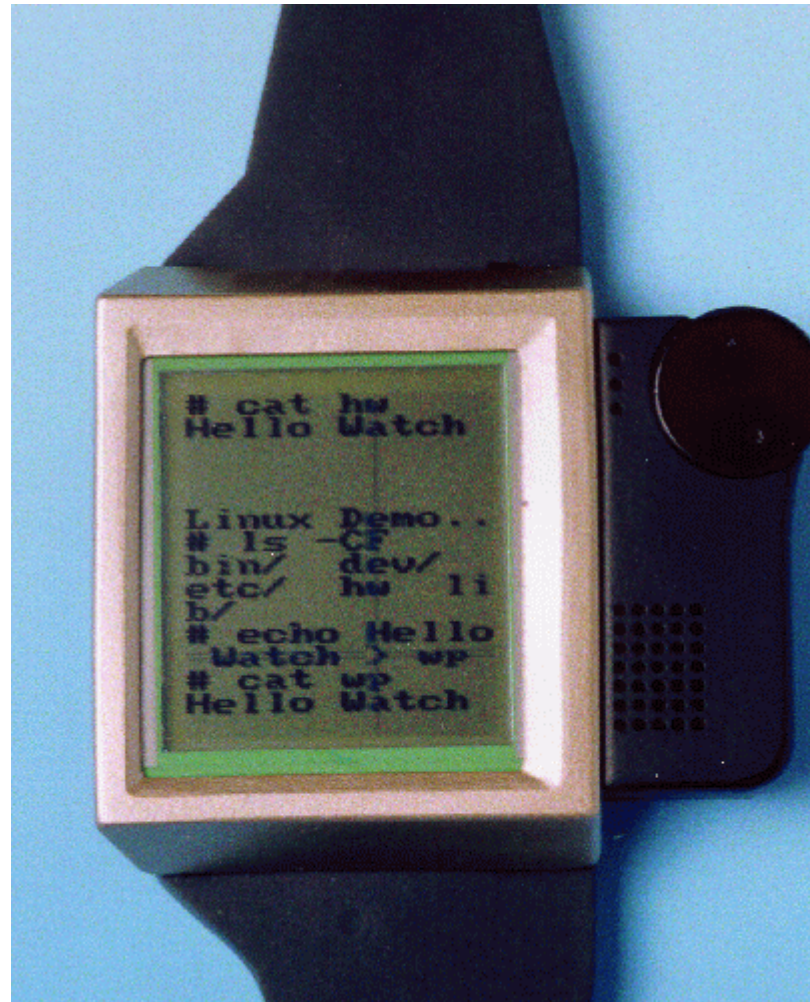
-distrowatch.com

June 2005

Advantages:

- Open Source

- Active Community involvement

- Accepted in Scientific Community
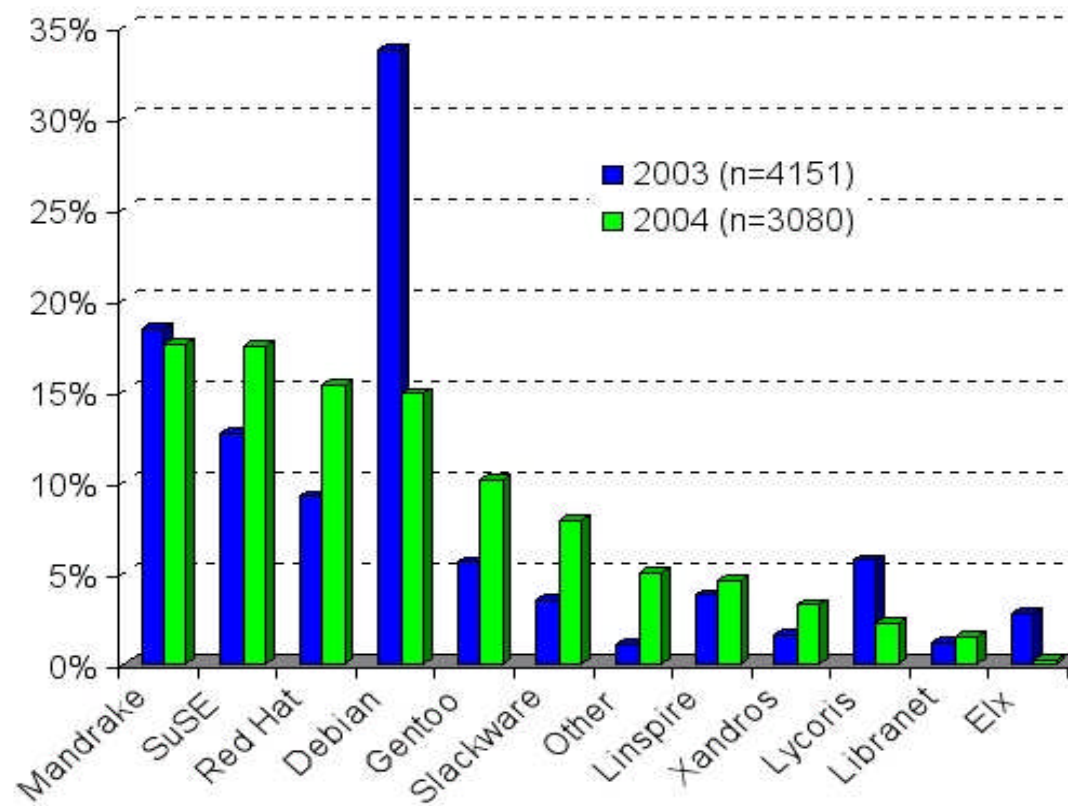
- Standard BSD/Sys V-R4 user interfaces

Embedded Big Blue Linux c. 2000
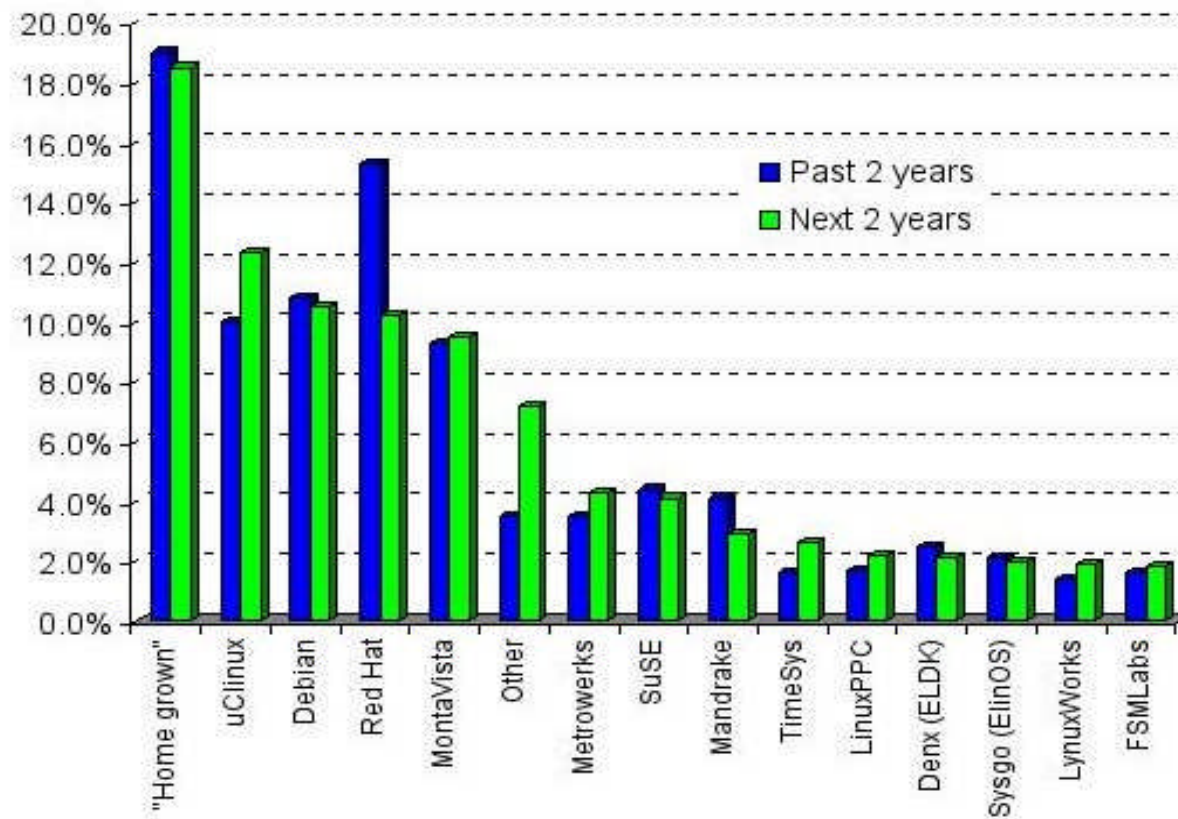
Popular Linux Distributions:

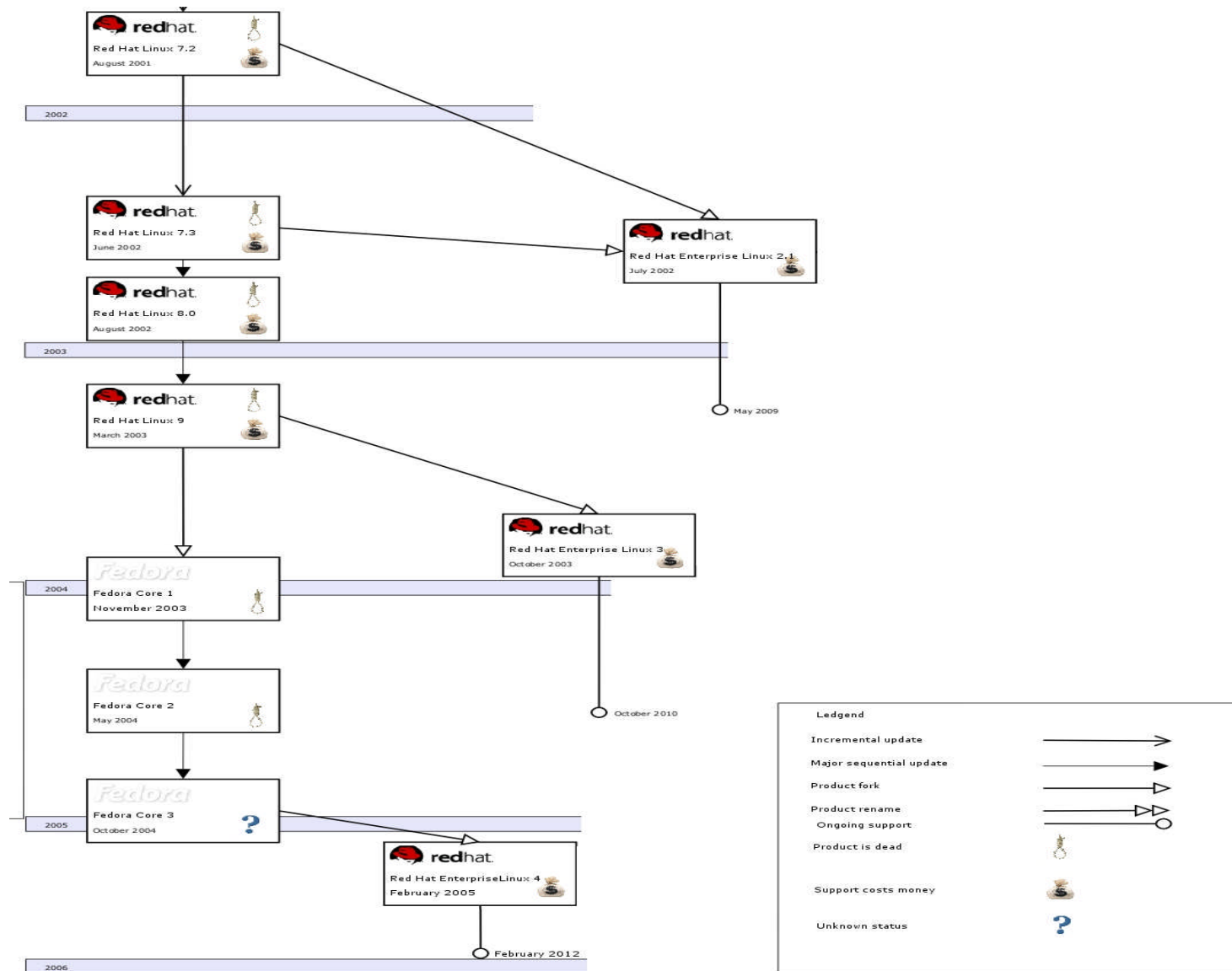LinuxDevices.com's 2004 Desktop Linux Market survey

Revised May 6, 2005

Popular Linux Distributions:

LinuxDevices.com's fourth annual Embedded Linux Market Survey
Mar. 12, 2004

http://linuxdevices.com/articles/AT8693703925.html

Red Hat Linux 7.2
August 2001

2002

Red Hat Linux 7.3
June 2002

Red Hat Enterprise Linux 2.1
July 2002

Red Hat Linux 8.0
August 2002

2003

Red Hat Linux 9
March 2003

May 2009

Red Hat Enterprise Linux 3
October 2003

Fedora Core 1
November 2003

2004

Fedora Core 2
May 2004

October 2010

Fedora Core 3
October 2004

?

Red Hat EnterpriseLinux 4
February 2005

2005

February 2012

2006

Ledgend

Incremental update	→→
Major sequential update	→▶
Product fork	→▷
Product rename	→▷▷
Ongoing support	→○
Product is dead	
Support costs money	
Unknown status	**?**

RedHat

- Demand for linux support from beam-line users
- Beam-line users have previous experience with linux at their home institutions
- Predominately RedHat, Debian and Suse
- RedHat becomming defacto in the Science Divisions at ANL
- RedHat is established and Fedora is supported by the linux community

AOD/IT support

- O.S. Installation and configuration

  Kickstart services

  Updates: patches, bug fixes and enhancements

  Integration into APS computing environment

  (e.g. printing, networking...)

  Third Party Package installation and configuration

- Unique or Special case hardware/software requirements

  Laptops

  Non-standard hardware

  Peripherals

  Third-party applications

- User Education

- Support Requests

- Security

Configuration Management:

Kickstart image

- Unix shells & Utilities

  sh, bash, csh, tcsh, ftp, ssh, scp, sftp etc.

  Open Office Suite, TeTex, Ximian, Thunderbird

  Office Productivity Packages, Citrix client, VPN

- File Viewers

  PDF, PostScript, Jpeg, etc.

- Graphics and Image Editors

  Gimp, ImageMagik

- Text editors:

  Emacs, Xemacs, Vi, Nedit

- WWW Applications

  FireFox, Mozilla, Lynx

Configuration Management:

- Serial Communications

Minicom, UUCP

- Development Suite

☐ Language support

C, Fortran, Perl, Python, Java, Tk/Tcl

mySQL server, Apache, TomCat

☐ Debugging support

ddd, memory profilers, etc.

- Versioning Control

Subversion, CVS

- Third Party Packages

epics/medm, Spec, Yorick, Matlab, IDL, Mathematica

Deployed Linux Platforms

CLO

Development:

EPICS/ MEDM

e-bricks,

soft IOC's, pvGateways

mySQL

OAG

CONTROLS

Workstation use:

General Desktop Computing

e.g. E-mail, remote X-sessions

Deployed Linux Platforms

LOM:

- Experiment Control , EPICS

- Data reduction, analysis & visualization and archiving

- Short Term Data Storage

- NFS and Samba services

- Publishing

Deployed Linux Platforms

Servers:

- Kickstart and Patch repository
- NFS services (/usr/local, EPICS)
- MySQL/Apache/Tomcat
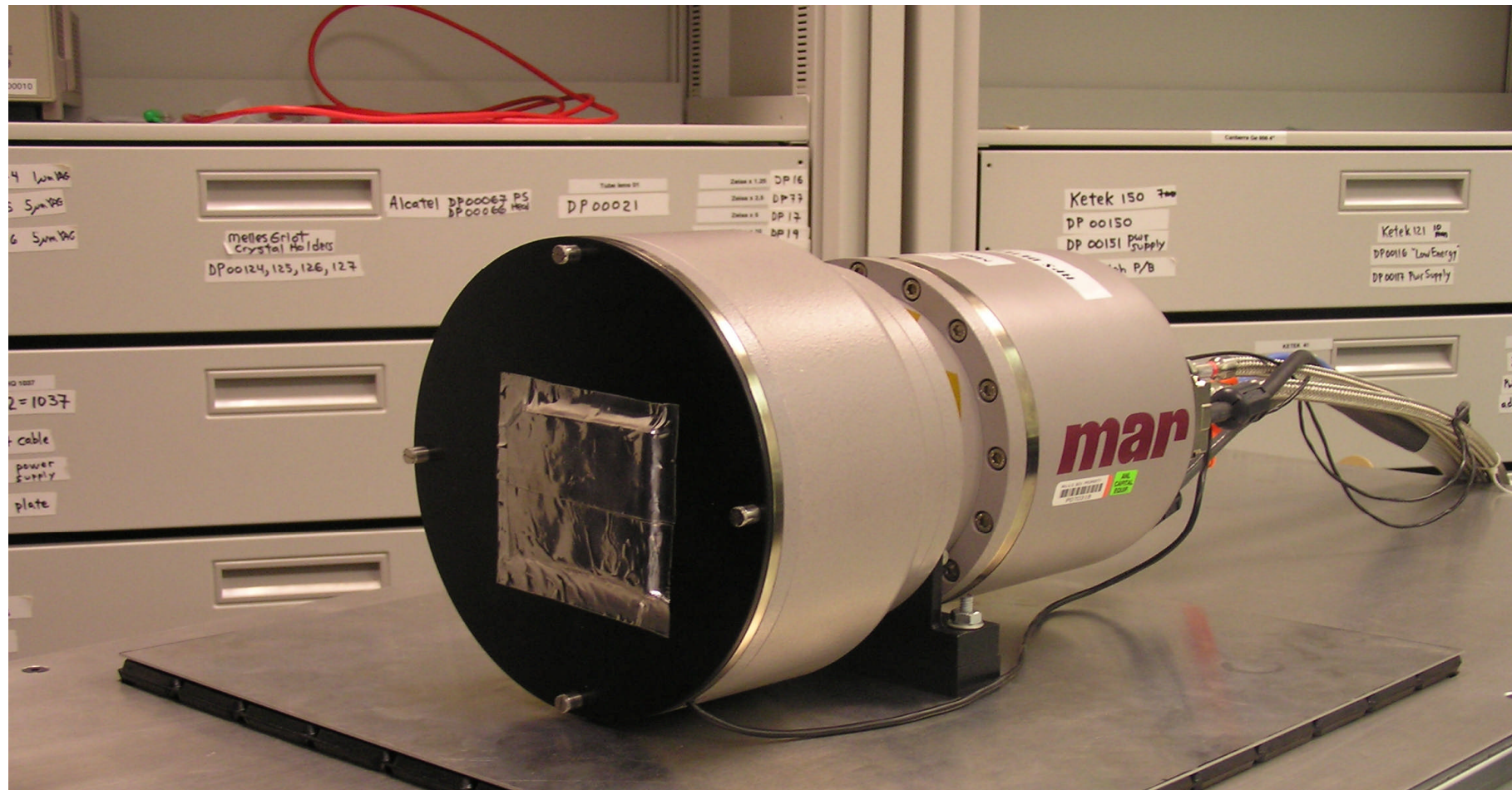- PV gateway
- Streaming Video
- WIKI
- Backup

Deployed Linux Platforms

Beam-line:

- Data acquisition and Experiment Control , EPICS, SPEC
- Detector Pool – MARS detectors ships w/ RedHat
- Data analysis & grid computing clusters
- Visualization
- Short Term Data Storage
- NFS and Samba services
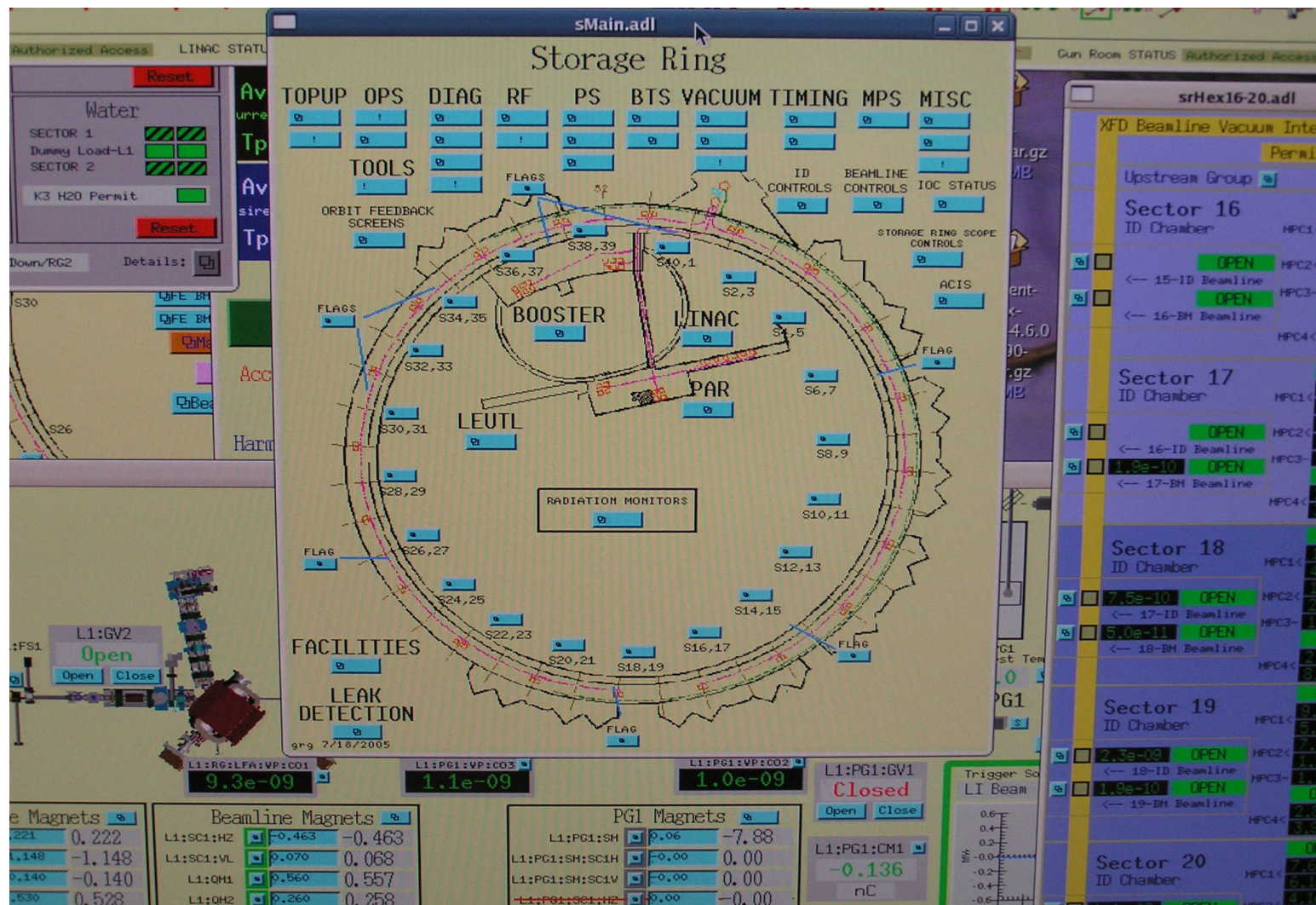
Detector Pool: X-ray Diffraction Detector

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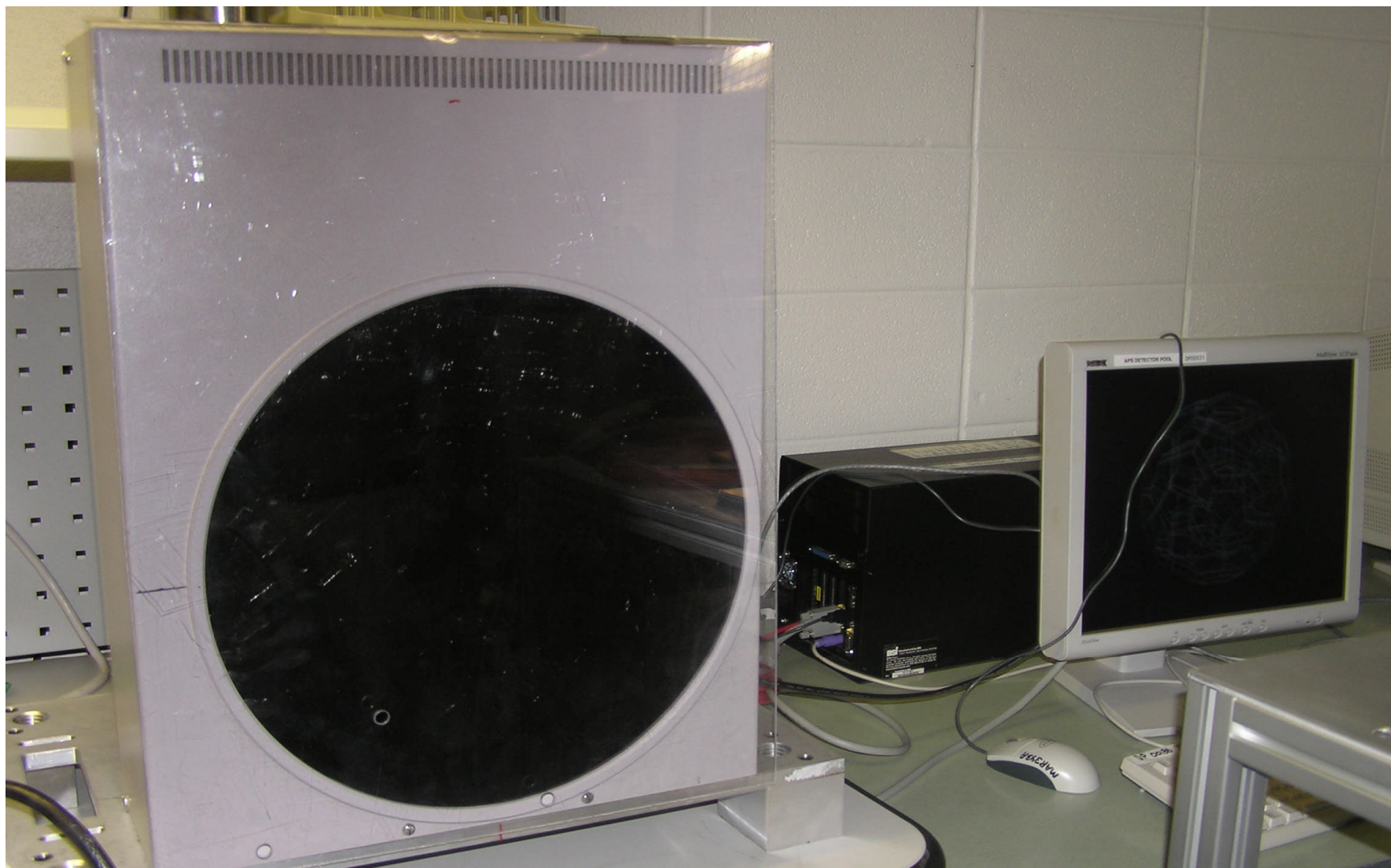
Sector 2-BM Tomography and Visualization: Linux Cluster
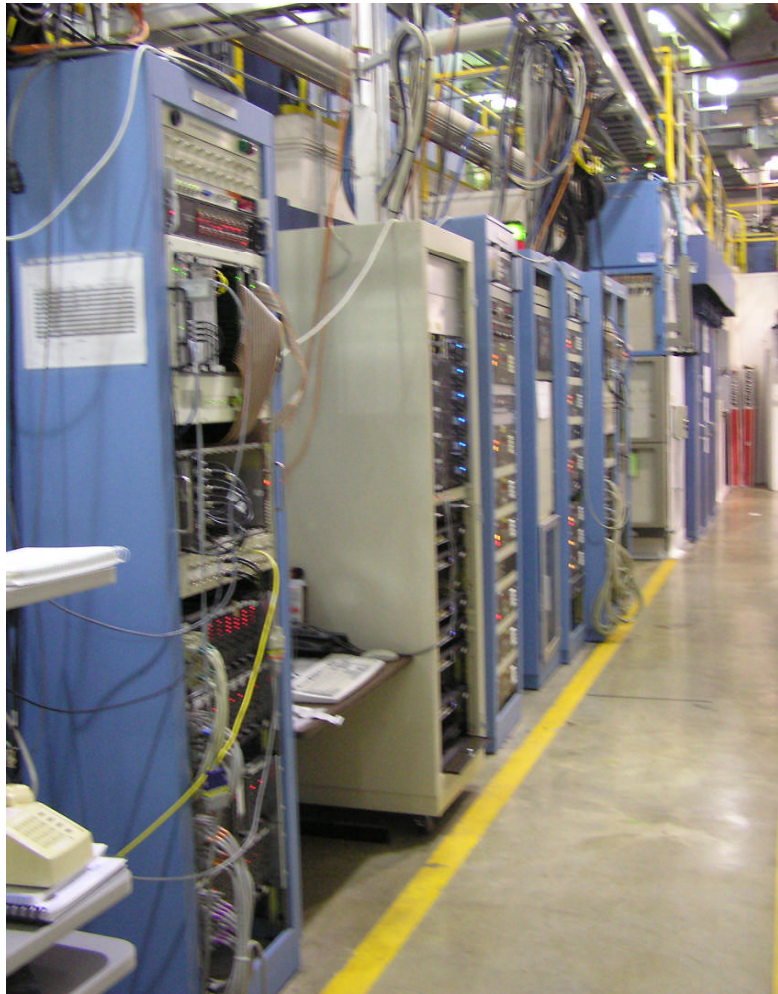
Sector 2-BM Tomography and Visualization: Linux Cluster

Typical EPICS/MEDM under Linux x-session

Beam-line Support

New sector placed under XOR support

- ASD/IT installs and configures RedHat Fedora Core release

- Network infrastructure upgraded as needed by ASD/IT network group

- BCDA installs beam-line control and data acquisition packages

Beam-line Support

- Additional Linux Clusters

- CNM support